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Concussion Rates and Gender in NCAA Competitions.: 1513: Board #60 May 28 3:30 PM - 5:00 PM

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PURPOSE: To compare the rate of concussions between genders in selected NCAA sports competitions

METHODS: The National Collegiate Athletic Association (NCAA) Injury Surveillance System (ISS) conducts ongoing annual surveillance of sport injuries using a sample of all NCAA member schools. Competition data from men's (M) and women's (W) soccer and M and W basketball (similar sports, similar rules, similar equipment -16 years) and M and W ice hockey (similar sport, similar equipment, different rules - 4 years) were analyzed to assess risk of concussion. Concussion was one of thirty distinct choices to report for injury type. To be reported, it must have occurred during a competition, required medical treatment and restricted the athlete's participation for 1 or more days. Exposures were defined as the number of athletes with playing time in each game and thus exposed to a risk of injury. Injury rates (IR) per 1,000 athlete-exposure (AE) and 95% confidence intervals (CI) were calculated and compared between genders. Significance was defined as non-overlapping CIs or $p < 0.05$. Results. Soccer (W - IR 1.42 concussion /1000 AE, CI 1.29-1.55, M - IR 1.08 / 1000 AE, CI 0.98-1.19) and basketball (W - IR 0.50 concussion/1000 AE, CI 0.43-0.56, M - IR 0.32/1000 AE, CI 0.27-0.37) showed significantly higher rates of game concussions for W participants. W ice hockey players showed similar rates (2.72 concussions/1000 AE, CI 2.02-3.43) to their male counterparts (2.29 concussions/1000 AE, CI 1.94-2.64) despite rules in the women's game that prohibit body checking. However, concussions accounted for 22% of W ice hockey game injuries over the sample period compared to 13% for M.

CONCLUSION: After evaluating multiple years of competition concussion data in selected sports, collegiate women athletes may be at greater risk for concussion than their male counterparts. This finding was apparent in sports where rules and equipment were similar (soccer, basketball) as well as in ice hockey where it would be hypothesized that women would have smaller concussion rates because of rules prohibiting body checking. While definitive definitions and assessment techniques for concussions have changed over the sample period, the consistent higher concussion rates among women in each of the sports analyzed justifies further research.